

USCG 907 – Autoclave Use and Safety

Last Update: 11/14/06

PURPOSE

To provide guidelines for maintenance and use of autoclaves on University premises.

AUTHORITY

Florida Administrative Code 64E-16 (64E-16.007)

SCOPE

All research labs and facilities using autoclaves.

GUIDELINES

Introduction

Autoclaves are used for the sterilization of materials/supplies for laboratory use and contaminated items for disposal. Autoclaves use saturated high-pressure steam to achieve sterilization temperatures, so proper knowledge, training, use, and maintenance is important in ensuring operator safety.

Training

All persons using autoclaves should be trained by an experienced user within your area or training should be requested through the manufacturer as needed. Completion of the EH&S bio-medical waste management, lab safety, hazard communication, bloodborne pathogen (if applicable), and PPE on-line courses is also required.

Operation Procedures

Preparation of Materials

- Place biological waste bags and liquid containers in a stainless steel or autoclave-appropriate pan in case of a spill.
- Fill liquid containers only half-full.
- Loosen caps or use vented closures.
- Space should be left between items to allow the steam to circulate.

Cycle Selection

- For autoclaving liquids, use the liquid cycle (121°C, 15 minutes for under 2 Liters).
- Select the fast exhaust cycle for glassware (135°C for 3 minutes)
- The fast exhaust cycle with a dry cycle is used for wrapped items (135°C for 3 minutes and 15 minute drying time)
- Bags containing biological waste should be autoclaved for 50 minutes to assure decontamination.

Removal of Materials

- Make sure the chamber pressure has returned to zero before opening the door
- Wear the appropriate PPE prior to removing any material from the autoclave (heat insulating gloves, eye protection, lab coat, and close-toe shoes)

- Stand behind the autoclave door before opening. Slowly open the door and allow the steam to gradually escape from the chamber.
- Allow materials, especially liquids, to cool for 20 minutes before removal.

Maintenance

- Autoclaves should be maintained according to the manufacturer's schedule, specifications, or recommendations.
- If the manufacturer's specifications are not available, a maintenance schedule is to be determined by the facility.
- Efficiency (e.g. *Bacillus stearothermophilus* spore testing) testing should be performed periodically to ensure the autoclave is working properly.

Recordkeeping

- All autoclaves must have a log book that includes the following information: the operator's name, lab location, phone number, date, and type and amount of material.
- Prior to autoclaving any material, autoclave users must fill out all information requested in the autoclave log book.
- All monthly quality assurance tests should be documented.

Safety Reminders

- Radioactive, hazardous (acids, ethanol, chloroform), pathological (body parts, carcasses, organs), sharps, and mixed waste cannot be treated in an autoclave. Please contact the following areas for disposal:
 - Radioactive waste 348-0489
 - Biological waste 348-3387
 - Hazardous waste 348-6971
- Make sure the drain strainer is clean before using the autoclave.
- Never attempt to open the door while the machine is operating.
- Notify the area/lab supervisor if the autoclave is not functioning properly so that repairs can be scheduled. **Do not** attempt to make repairs to the autoclave.
- Use of the autoclave is **prohibited** until repairs are made, and a sign must be posted by the area/lab supervisor warning others not to use the autoclave.

For further information please contact the Department of Risk Management and Environmental Health and Safety at 348-2621.